

those he had seen had the soft disk supported by the pali. He was then made aware that the supposition did not come within the scope of the word conjecture, and there was no remonstrance whatever on his part, as Prof. Lindström thinks. The so-called supposition was not mine, but that of a man whose admirable and extensive original researches led him beyond the troubles of criticism. Jules Haime's essay on the soft parts of *Cladocora cespitosa** is one of the most interesting and important of his works, and is of great value because he described the soft structures in their natural condition and not after altering them by reagents. It was necessary that I should abstract this essay in my introduction to the "Supplement to the British Fossil Corals," Palæontographical Society, 1866. The translation of the part of the sentence, "coïncide avec la présence des palis situés au dessous et en dedans de ces tentacules," although placed between inverted commas, was mistaken by my friend as my own opinion and the result of my own work.

There was no supposition, but a definite statement of a fact by a naturalist who was as well able to judge the truth as any subsequent investigators.

Whilst I was preparing the monograph just alluded to, Mr. Peach was good enough to watch and draw some specimens of *Caryophyllia clavus*, var. *borealis*, and to send me his finished delineations and descriptions. The lithographs on plate ii. Monogr. Brit. Foss. Corals, pt. i. 1866, figs. 9-20, are correct reproductions of nature. He was convinced, as I was and still am, that the inner row of tentacles of figs. 9 and 11 relate to the pali in the manner *seen* by Jules Haime in *Cladocora*.

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LIV.—*On some Hydrocorallinæ from Alaska and California.*
By W. H. DALL †.

THE descriptions herewith, with one exception, are of species from an area from which none have hitherto been described ‡.

* Hist. Nat. des Corall. vol. ii. p. 591.

† From a separate impression from the 'Proceedings of the Biological Society of Washington,' vol. ii. 1883-84. Communicated by the Author, having been read March 22, 1884.

‡ A *Stylaster rosso-americanus*, Brandt, has been mentioned (Z. wiss. Zool. xxii. p. 292), but has never been described or figured. It may be an additional species.

They are closely allied to species found in the Oregonian and Californian province described by Prof. Verrill, but have been, by his kind assistance, compared with his types, and appear to him and to myself to be distinct species, differing not only in habit and form, as well as relative size of the calyces, but especially in the sculpture and texture of the surface of the corallum. It is quite probable that the other species may hereafter be found in South-eastern Alaska, in which case the fauna would comprise:—

Allopora venusta, Verrill; *Allopora Verrillii*, Dall; *Allopora californica*, Verrill; *Allopora Moseleyi*, Dall; *Allopora papillosa*, Dall.

To complete the list of Alaskan coralloid animals, *Calliorgia compressa* of Verrill may be added, as found in the Aleutian Islands, the only representative of the sea-fans yet known from the region, which is, however, extremely rich in Sertularian Hydroids.

Allopora Verrillii, n. s.

Cœnosteum thin, reptate, whitish to pale rose-pink, solid, incrusting; with a smoothish irregularly lumpy surface, pretty regularly dotted with sporadic calyces, composed of circular gastropores, each surrounded by a circle of from five to nine dactylopores, with occasional sac-shaped ampullæ, which are most abundant on the most elevated projections of the surface and almost entirely absent from depressed parts. Diameter of the dactyloporic circle about 1.0 millim., of the central gastropore about 0.37 millim.; the distance from centre to centre of the calyces varies from 1.5 to 2.5 millim.

Gastropores cup-shaped, shallow (0.25–0.50 millim.), smooth inside, with the tip of a white spiculose nipple-shaped or roundly conical style in the bottom of each, projecting about its own diameter or less into the cup through the aperture of a long, nearly vertical, conical tube, which it occupies and closely fills. The length of this style, which resembles a fox's brush, is nearly equal to the thickness of the cœnosteum. The margin of the cup in fully developed gastropores is simple and entire, and depressed slightly below (or in no case elevated above) the general surface. In immature calyces there is frequently a shallow groove running from the innermost point of each dactylopoire toward or into the gastropore.

Dactylopores variable in number, eight seeming to be the normal, but seven the most common number, never sporadic, in well-developed calyces entirely separated from the cavity of the gastropore throughout their extent; in immature ones

joined to it by a shallow superficial groove. Transverse section a little ovoid, the wider arch away from the gastropore, and marked by a vertical, narrow, spongy lamina forming the style. The exterior margin simple, not elevated above the general surface, but rather slightly depressed below it. Neither sort of pore shows tabulæ. Ampullæ simple, sac-shaped cavities as large as or larger than the calyces, not protruding above the general surface, but more numerous on the prominences of the crust.

General surface between the above-described openings impervious, nearly smooth, with the vermicular fine reticulations of the cœnosteum structure showing through the translucent substance, and giving the surface a granular look, a vertical section of the crust looking much the same. Soft parts unknown. Crust growing several inches in diameter, and rarely more than three-eighths of an inch in thickness, generally found on dead shells of *Modiola* or pieces of Nullipore from deep water.

Habitat. Thrown up on beach of Chika Islands, Akutan Pass, Aleutian Islands, near Unalashka. Five specimens collected May 1872 by W. H. Dall. Catalogue number, U. S. Nat. Museum, 4193.

Allopora Moseleyi, n. s.

Cœnosteum thick, nodulous, or indistinctly branched, rosy pink, solid, with an irregular vesicular surface with sporadically distributed protuberant calyces, consisting of subcircular gastropores, deeply vertically grooved near their margins by from seven to twelve dactylopores, whose cavities are continuous with the cavity of the gastropore. Ampullæ not observed. Diameter of the dactyloporic circle about 1.5 millim.; of the gastropore proper 0.75 millim. Gastropores rather deeply (0.50-0.75 millim.) cup-shaped, with the inner surface spiculate; style as in the preceding; margin of the pore deeply indented by the dactylopores, which are usually nine in number, but appear to be normally twelve; the whole calyx projecting, nipple-like, about 0.5-0.6 millim. from the general surface; recalling, in form, a small contracted *Zoanthus*. A spiculate lamellar style appears in the depth of each dactyloporic groove on careful search. The grooves appear to remain always open.

General surface impervious, covered between the raised calyces by small irregular sparse vesicular projections of the cœnosteum, otherwise in appearance and compactness much as in the previously mentioned form. Soft parts unknown.

Habitat. Kyska Harbour, Kyska Island, in the Western Aleutians; one specimen on the beach growing in a cavity between the layers of a mass of Nullipore, collected July 1873, by W. H. Dall. Museum number 6851.

Allopora papillosa, n. s.

Cœnosteum very thin, incrusting, livid madder-pink or brown, with a regularly papillose surface, with close-set sporadic calyces composed of deep cylindrical gastropores vertically grooved for from three to six dactylopores, which are wholly continuous with the cavity of the gastropore. Ampullæ not noticed. Diameter of the calyx about 0·5 millim., of the gastropore proper about 0·35 millim.; average distance between the calyces 0·7–1·3 millim.

Gastropores deep, cylindrical, with a short, hardly perceptible style, which comes into the bottom of the gastropore; but, as a vertical section shows, not vertically but obliquely from one side. Inner surface nearly smooth, a narrow elevated ridge bounding the margin of the combined gastropores and dactylopores.

Dactyloporic grooves rather shallow, long, each with an evanescent trace of a style on the outer wall; six seems to be the normal number to each calyx.

General surface spiculose or finely granulated with small, pointed granules, with regularly-shaped, elevated, uniform papillæ standing in the spaces between the pore-margins, and rising to about the same height, but absent on the immature growing margin of the colony.

Cœnosteum less vesicular than in the previously described forms. Soft parts unknown.

Habitat. On the outside of a living *Mytilus californianus*, from 6 fathoms, Coal Harbour, Unga Island, Shumagin Islands; collected October 1874, by W. H. Dall. Museum number 6852.

Errina Pourtalesii, n. s.

Cœnosteum of a saccharine structure, rising in stout, sub-cylindrical, rather round-pointed, occasionally branching stems 10 to 50 millim. high (possibly much larger at times), and 8 or more in diameter; colour, when fresh, deep rose-red, bleaching to white or grey in dead specimens; surface loosely granular, becoming lighter coloured and more compact inward toward the central axis; gastropores disposed in irregular lines, which, in the specimen in hand, have a tendency to run from the base spirally to the left, around the column, but are

so crowded that little of the surface is free from the nariform hoods of the attendant dactylopores; the gastropores average 0.25 millim. apart, but are rather irregular and occasionally sporadic; a rounded, rather smooth-topped style fills the pore nearly to the brim; the dactylopores are arranged alternately on opposite sides of the row of gastropores opposite the intervals between the latter, though sometimes crowded out of regularity; they are furnished with subtubular projections, squarely truncated at the top and open toward the gastropores, rising above the general surface to about 0.5 millim. or more; when perfect the styles rise nearly to the summit of the enclosing hood, slender, pointed, and rather feathery; two thirds of their length, in general, is above the surface, and the depth of the gastropores is seldom greater (as a rule less) than that of the submerged portion of the others. Ampullæ on the surface, barely covered by a network of cœnosteal granules, which are often broken away, leaving shallow open cups between the projecting hoods; there are no scales, and the circular margin of the gastropores is smooth and simple.

Soft parts unknown.

Habitat. In 50–100 fathoms about the Farallones Islands, off the coast of California, on stones which are frequently brought up on the fishermen's hooks entangled in the corals. A large stone with several specimens upon it was obtained by Count Pourtalès in 1873, and is now in the Museum of Comparative Zoology at Cambridge, from which the specimen described was selected; other specimens are in the collection of the California Academy of Sciences. This coral, as well as *Allopora venusta* and *A. californica*, Verrill, meet with a ready sale in San Francisco, owing to their beautiful colour, which, however, is not lasting if the specimens be much exposed to the light. The present species seems to do a good deal toward bridging the gap between *Errina* and *Distichopora*, as defined by Moseley. Museum number 6853.

I may add, in conclusion, that through the kind co-operation of Prof. G. O. Sars and Miss Birgithe Esmark, I have been enabled to compare the Alaskan and Norwegian *Alloporas*, which, however, do not present any very marked points of resemblance outside of the generic characters.!